

Appl. No. : 10/506,398
Filed : May 11, 2005

REMARKS

In response to the Office Action mailed April 3, 2006, Applicant has amended the application as above. No new matter is added by the amendments as discussed below. Applicant respectfully requests the entry of the amendments and reconsideration of the application in view of the amendments and the remarks set forth below.

Discussion of Claim Amendments

Claims 1, 4 and 5 have been amended. Claims 1 and 3-6 are pending in this application. Entry of the amendments is respectfully requested. Claims 1, 4, and 5 are amended based on the original claim 2 and the original specification, page 7, lines 1 to 3, "The circumferential direction forming angle of the threaded section 10 from its top edge 10a to its bottom edge 10b should be from 600° to 720° (preferably from 640° to 720°, ideally from 680° to 720°)".

Discussion of Rejection of Claims under 35 U.S.C. § 102(b)

Claims 1, 2, 4 and 5 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. DE4203238, to Hermann, et al. Furthermore, Claims 1, 2, 4 and 5 were rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Publication No. 2001114310. Applicant respectfully submits that pending Claims 1, 2, 4 and 5 are allowable over the cited references as discussed below.

Rationale of 35 U.S.C. § 102

"For a prior art reference to anticipate a claim under 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference." *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677, 7 USPQ 2d 1315, 1317 (Fed. Cir. 1988).

Discussion of Patentability of Pending Claims

According to one embodiment, an angle of circumference along which a threaded section is formed is from 680° to 720°. In this embodiment, the divided threaded section next to the top plate (hereinafter referred to as the top divided threaded section) and the divided threaded section farthest from the top plate (hereinafter referred to as the bottom divided threaded section) are formed continuously along the circumference. Thereby, the strength of the threaded portion

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becomes uniform along the circumference. Furthermore, in view of this, the deformation of the cap during manufacture can be prevented. In addition, since the fitting state is uniform along the circumference, good sealing performance can be obtained.

Moreover, according to this embodiment, by forming the divided threaded section between the top divided threaded section and the bottom divided threaded section (hereinafter referred to as the middle divided threaded section) continuously as one ridge, the equipping state of the cap is maintained normally, and the sealing performance can be prevented from deteriorating (see, the original specification, from page 13, line 7 to page 14, line 11).

Referring to the original specification, the deformation strength of the cap due to internal pressure (hereinafter referred to as deformation strength) is diminished gradually from the top divided threaded section to the bottom divided threaded section. In addition, the dividing sections which have no ridges also have low deformation strength. By appropriately setting the circumferential forming angle of the threaded sections, in one embodiment the largest interval between the top divided threaded section and the bottom divided threaded section becomes 20°. The deformation strength varies at this interval. However, since the middle divided threaded section is formed at the interval and is not divided along the circumference, that is to say, since the dividing sections which have no ridges are formed between the top divided threaded section and the bottom divided threaded section along the circumference, the deformation strength can be prevented from changing a considerable degree.

However, when the dividing sections are formed at the middle divided threaded section (contrary to the present invention), the deformation strength is lowest at the circumferential position from the bottom divided threaded section to the dividing section. That is to say, the weakest portion and the strongest portion in the deformation strength are adjacent along the circumference direction. Therefore, the weakest portion further becomes easy to be deformed due to internal pressure. However, according to the present invention, since there is no markedly weakened section in terms of deformation strength along the middle divided threaded section, it is possible to obtain the cap having strength uniformly along the whole circumference.

Turning to the claims it is seen that Claim 1, as amended recites: "the divided threaded section which is immediately below the divided threaded section at the nearest position to the top plate and the divided threaded section which is immediately above the divided threaded section

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at the farthest position from the top plate are formed continuously.” Applicant respectfully submits that the other independent claims each recite similar types of limitations.

Applicant respectfully submits that these limitations are not taught or suggested by the cited art. De Santana (US-5,257,705) discloses a cap which has no dividing section at the middle divided threaded section, in FIG. 4. However, in the cap of de Santana, since the interval along the circumferential direction between the top divided threaded section and the bottom divided threaded section is large, it is expected that the strength of the threaded section may deteriorate in this section, that deformation during manufacture may occur, and the sealing performance may be uneven. De Santana discloses that the intervals 16 are provided in order to remove the gas, De Santana fails to recognize that the intervals 16 affect the strength.

Druitt et al. (US-6,325,225) and Herrmann (DE4203238) disclose caps having small intervals between the top divided threaded section and the bottom divided threaded section along the circumferential direction. However, in these caps, since the middle divided threaded section is divided by dividing sections, the cap and bottle are infirmly fitted around the dividing sections. Therefore, deformations may easily occur and the sealing performance may be uneven along the circumference direction. In these cited references, the dividing sections are disclosed to be formed in order to remove the gas; the structure such as in the present invention having the purpose of making the cap strength uniform is not disclosed or suggested in the cited references. Moreover, Applicant respectfully submits that the foregoing limitations are not taught or suggested by (JP 2001114310).

Advantageously, in one embodiment, the deformation strengths of adjacent sections along the circumferential direction are markedly different and expansion deformation easily occurs. Applicant respectfully submits that a person skilled in the art would not be motivated to combined these references to derive the presented claimed invention ,because the purpose of the dividing sections of the cited references are to remove the gas. The cited references fail to identify the problem or provide a solution to the issue of deformation while producing the cap or the unevenness of the cap strength. Applicant respectfully submits that one of ordinary skill in the art would be motivated to modify the prior art to derive the presently claimed structure so as to obtain the uniform cap strength as described herein.

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CONCLUSION

In view of Applicant's foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

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Dated: _____

8/3/2006

By: _____

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